Shigella Then and Now: Comparing Passive Surveillance for Shigellosis in Five FoodNet Sites, 1996-1998

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Background: *Shigella* is a common cause of diarrhea and has caused foodborne outbreaks and outbreaks in day-care centers. Public health efforts to prevent person-to-person transmission are triggered by identification of cases through accurate surveillance. We sought to determine the burden of illness, to describe the epidemiology of shigellosis and to compare incidence as measured by active and passive surveillance systems.

Methods: Active surveillance for seven enteric bacterial diseases was done as part of the Emerging Infections Program's Foodbome Diseases Active Surveillance Network (FoodNet) in California, Connecticut, Georgia, Minnesota, and Oregon. Clinical laboratories have been contacted regularly since 1996 to ascertain culture-confirmed shigellosis cases. Demographic characteristics and outcome data were collected from patients by health department staff. In the passive surveillance systems, culture-confirmed cases were reported to health departments primarily by clinical laboratories. We report 3 years surveillance in the five original FoodNet sites and compared rates in these sites with rates from states with passive surveillance.

Results: In the FoodNet sites, 3784 cases were identified from 1996-1998, yielding an annual incidence of 8.3/100,000. The incidence rates were similar for the 3 years. In states with passive surveillance, the annual rate was 2.9/100,000. In FoodNet sites, *S. sonnei* accounted for 72% of infections, followed by *S. flexneri* (22%), *S. boydii* (0.9%), and *S. dysenteriae* (0.6%). The species distribution was similar in the passive surveillance systems. In FoodNet sites the overall rates were higher among children 1-9 years old (29.4/100,000), males (9.4/100,000), blacks (19/100,000), Hispanics (16.4/100,000), and Native Americans (12.4/100,000). The average hospitalization rate was 8.6%. California (14.3/100,000) and Georgia (16.9/100,000) had higher rates than other sites. Significant demographic differences were observed among the sites; rates were higher among males in California (17.8/100,000) compared to males in other FoodNet sites (7.3/100,00.0), and in California higher rates were observed among adults compared to adults in other sites.

Conclusion: There is significant regional and demographic variability in the incidence of shigellosis; further study is needed to explain this variability . The reported incidence in active surveillance sites is almost three times higher than that reported in sites with passive surveillance. Unreported cases represent missed opportunities for prevention and reservoirs for continued spread. Efforts to improve reporting of shigellosis are needed.

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